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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/731,572

12/08/2003

David G. Bird

2240P111C

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07/22/2008

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EXAMINER

KIANERSI, MITRA

ART UNIT

PAPER NUMBER

2145

MAIL DATE

DELIVERY MODE

07/22/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/731,572	<b>Applicant(s)</b> BIRD ET AL.	
	<b>Examiner</b> MITRA KIANERSI	<b>Art Unit</b> 2145	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 34-67 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 34-67 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 34-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hao (US patent No: 6,510,479 B1) and further in view of Beser et al. (US Patent No.6, 697,862)

1. As per claims 34, 61-62, a method, comprising:  
communicating information between Internet protocol (IP) hosts over a controller area network (CAN) bus within a vehicle equipped by encapsulating an IP message in a CAN protocol message. (Hao in col 2, lines 44-55 discloses a method implemented in a CAN device, a CAN microcontroller, that supports a plurality of message objects, that includes concurrently staging two or more transmit messages associated with respective ones of two or more enabled transmit message objects for attempted transmission over a CAN bus coupled to the CAN device, and performing a pre-arbitration process to determine which of the two or more concurrently staged transmit messages has priority. Hao do not teach the encapsulation of an message in a CAN protocol message, but Beser et al in col 8, lines 21-30 discloses a Cable Modem Termination System or a CMTS 12 that at the other end of the virtual tunnel receives the packet, strips off the encapsulating IP 54 header, and forwards the packet as appropriate. Therefore, for the motivation to achieve the applicant's invention, it would have been obvious to one of ordinary skill in the art at time the invention was made to employ Beser's invention, to improve the maintenance of the network address tables so that stale entries are quickly identified and removed from the table. Removal of stale entries may improve resource allocation and security in a data-over-cable system.

2. As per claims 35 and 49, including using the IP destination address to determine a next-hop IP address. (a number of hops field 116 ("hops", col 12, lines 24-34, Beser)
3. As per claim 36 and 50, including determining a CAN bus address based upon the next-hop IP address. (Claim 21 of Beser reference discloses a CAN device comprising a global control register that is programmable for the purpose of permitting a user to select one of the at least two pre-arbitration schemes. Beser also in col 12, lines 41-55 and Table 6 and Table 8 explain the process of next-hop IP address in details).
4. As per claim 37 and 51, wherein if the next hop IP address is a broadcast or multi-cast address, a CAN global address is used as the CAN bus address. (Table 8 on Col 18 explains the broadcast multi-cast address, Beser)
5. As per claim 38 and 52, wherein if the next hop IP address is a unicast address, using an address resolution protocol request to determine the CAN bus address. (table 5, Beser)
6. As per claim 39, 43, 48, 56 and 59, wherein using an address resolution protocol request further comprises: transmitting a CAN bus address request message on the CAN bus; and receiving a reply message from one of the IP hosts, including the CAN bus address. (Col 29, lines 14-29 and col 17, lines 33-67 and col 18, lines 1-11, Beser)
7. As per claim 40, further comprising: transmitting the CAN/IP message to the CAN bus address; and receiving the CAN/IP message at a first one of the IP hosts, which corresponds to the CAN bus address. (col 4, lines 56-67 and col 5, lines 1-22, Baser and (col 6, lines 59-67 and col 7, lines 1-13, Hao)
8. As per claims 41, 53-54 and 57, wherein after receiving the CAN/IP message, authenticating the CAN/IP message as being from a second one of the IP hosts. (col 2, lines 24-36, Beser)
9. As per claim 42, 46-47, 55 and 58, wherein authenticating the CAN/IP message further comprises:  
extracting a CAN source address from the CAN/IP message, wherein the CAN source address is associated with the second one of the IP hosts; and comparing the CAN source address with known CAN addresses stored in an address resolution protocol

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(ARP) cache, which stores CAN bus addresses and IP addresses.(col 11, lines 43-52, Beser) and (col 9, lines 47-67 and col 10, lines 1-27, Hao)

10. The method of claim 44, wherein after authenticating the CAN/IP message, determining the CAN/IP message type. (col 29, lines 30-45 and Table 1, describes the authentication. Beser)

11. As per claim 45, wherein if the CAN/IP message type is an ARP request corresponding to the first one of the IP host's IP address, sending an ARP reply verifying the first one of the IP host's address. (Col 13, lines 24-34 and Table 5 illustrates a typical use of DHCP 66 protocol to discover a network host interface from a network host client, Beser).

12. As per claim 46, wherein if the CAN/IP message type is an ARP reply to a previously sent ARP request, adding the IP address extracted from the ARP reply to the ARP cache. (Table 4, Table 6 and Table 8, Beser)

13. As per claim 47, wherein if the CAN/IP message type is a CAN/IP datagram, extracting and processing the IP message. (Table 4, Table 6 and Table 8, Beser)

14. The system of claim 57, wherein the second IP host is configured to extract and process the IP message if the CAN/IP message type is a CAN/IP datagram. Col 3, lines 15-35, Beser )

15. As per claim 63, wherein a CAN device and said IP host are coupled to the CAN bus. (Fig .20 and col 28, lines 45-67 is flow diagram illustrating a method for using Host Configuration messages, Beser).

16. As per claim 64, the apparatus wherein the first IP host is configured to communicate with the second IP host by transmitting the CAN/IP message over the CAN bus. (Col 28, lines 45-67, Beser).

17. As per claim 65, the apparatus wherein a CAN device and said first and second IP hosts are coupled to the CAN bus. (Col 28, lines 45-64, Beser).

18. As per claim 66, the method wherein a result of said encapsulating is a CAN/IP message, which includes an IP destination address. (Col 28, lines 45-64)

19. As per claim 67, the method wherein a CAN device and said IP hosts are coupled to the CAN bus. (Col 28, lines 45-64 and Table 3 contains a data path through a cable

system where the CM 16 responds to the cable data frame and encapsulates a response IP 54 datagram in a PPP 50 frame and transmits it upstream with the modem interface 48 via the PSTN 22 to the Trac 24, Beser).

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mitra Kianersi whose telephone number is (571) 272-3915. The examiner can normally be reached on 8:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Cordone can be reached on (571) 272-3933. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mitra Kianersi  
July/03/2008

/Jason D Cardone/  
Supervisory Patent Examiner, Art Unit 2145